COUNCIL AGENDA ITEM **L-5**
COUNCIL MEETING OF **1/19/16**

REQUEST FOR COUNCIL ACTION

SUBJECT: PROPOSED WATER AND SEWER RATE INCREASES

MOTION:

I move that the City Council accept the staff recommendation for water and sewer rates listed in the Recommended Rate Adjustments section, and direct staff to prepare ordinances and issue the required Proposition 218 notice for a public hearing.

STAFF RECOMMENDATION:

Staff recommends that the City Council accept the staff recommendation for water and sewer rates listed in the Recommended Rate Adjustments section, and direct staff to prepare ordinances and issue the required Proposition 218 notice for a public hearing.

COMMISSION RECOMMENDATION:

On February 5, 2015, the Utilities Advisory Committee recommended a 2.5 percent sewer rate increase in 2015 and 2016, and to leave nonpotable water rates unchanged.

On December 17, 2015, the Utilities Advisory Committee recommended to implement water rate adjustments of 15, 15, and 10 percent in mid-2016, January 2017, and January 2018, respectively. This recommendation included keeping the existing tiered billing method until a budget based rate can be implemented if approved in January 2017.

DISCUSSION:

A. Introduction

As part of the Redlands Municipal Code (RMC) staff is required to evaluate the water and sewer rates. As part of the evaluation process the Council assembles a citizen/customer committee, the Utilities Advisory Committee (UAC). The UAC is charged with evaluating the utility budgets and rates; and works with staff and a financial consultant. Serving in an advisory capacity to the City Council, the UAC makes rate recommendations that are intended to ensure revenues received are sufficient to properly operate and maintain the utilities. Additionally, rates recommended should be easily understood, equitable to all users, tied to the cost of providing service, and comply with state and federal regulations. This process involves first evaluating each utility's budget and making the appropriate adjustments to properly operate and maintain the utility; determining the revenue adjustments necessary to meet all the financial obligations of the utility, including operations costs, staffing, capital improvements, and debt service; and finally, designing a rate that will generate the needed revenues from each customer in an equitable fashion.

B. UAC Recommendation

In late 2014, UAC met with City staff and Raftelis Financial Consultants, Inc. (RFC) to review water, sewer, and nonpotable water rates. By February 2015 and after several meetings, the UAC made a recommendation for Council to increase water rates to achieve a revenue increase of 7 percent for 2015 and 7 percent for 2016; to increase sewer revenues 2.5 percent in the same years; and voted to leave the nonpotable water rates unchanged. The water rate proposed was to be implemented using the current three tier system as has been used for the past several years.

Following this recommendation, which was never presented to Council, the City Manager requested staff and RFC revisit the water rate model to find a way to reduce the water rate adjustment to no more than five percent and increase the amount budgeted for pipeline replacements while upholding the UAC's objectives. With the Governor's drought mandates issued on April 1, 2015, requiring California water utilities to increase their water conservation efforts to allow the state to achieve a statewide water reduction of 25 percent, the financial conditions of the City's water utility and its need for an enhanced pipeline replacement program was reevaluated.

After several meetings, on December 17, 2015, the UAC recommended to implement three rate adjustments of 15, 15, and 10 percent in mid-2016, January 2017, and January 2018, respectively. Additionally, this recommendation included keeping the existing tiered billing method until a budget based rate could be implemented, if approved, in January 2017. Both the traditional tiered and budget based rates are described in detail below.

C. Traditional Tiered Rate

The traditional tiered structure has two components, a service charge, which is based on meter size, and a commodity charge. The commodity charge is based on the amount of water delivered and increases as the amount of water delivered increases. This is due to the City utilizing its least expensive sources first before using more costly sources. Also, the amount of water available within each of the three tiers has changed, which is based on a 10 year average of water utilized from each source. Regardless of the customer type, each customer receives the same amount of water from each tier throughout the year. An example of a water bill with a tiered rate is shown on the following table.

Example Bill (3/4 Inch Meter, 50 CCF Used)				
Water Supply Charges	CCF per Tier	Water Use	Water Supply Rate	Total Water Supply
Tier 1	0-16	16	$1.18	$18.88
Tier 2	17-27	11	$1.45	$15.95
Tier 3	28+	23	$2.20	$50.60
Total Commodity Charges		50		**$85.43**
Service Charge				**$35.35**
Total Bill				**$120.78**

D. Budget Based Rates

Partly in response to the Governor's drought mandates, on July 7, 2015, City Council approved an agreement for staff to work with RFC to complete a budget based water rate design study. At that meeting, staff was also directed to participate in the Santa Ana Watershed Project Authority (SAWPA) Emergency Drought Grant Program to develop a budget based water rate which would move the City away from the current tiered rate model. Since the July Council meeting, staff secured approval of the SAWPA grant to design the budget based rate. With the grant and agreement with RFC to complete the study secured, staff and RFC worked with the UAC to develop the budget based rate design.

The budget based rate developed is based on economic factors for each type of customer and their usage patterns. This is important as the California Constitution requires property related rates and fees, including water rates, be based on the cost of the service being provided to each parcel. The budget based rate structure described herein is not unlike the traditional rate structure whereas there are two rate components: service charge and tiered commodity charge. However, with the budget based rate, Peaking Charges are no longer embedded in the commodity charge. By extracting the Peaking Charges and determining the usage patterns of each customer and customer classes, a more tailored rate is charged to individual customers.

The budget based rate has three basic categories where charges are applied:

1. Service Charge, which is based on the size of the meter;
2. Water Supply Charges, which is based on water availability from the City's water sources and is broken into three tiers based on a 10 year average of water utilized from each source (these tiers are the same for all customers and do not change); and
3. Peaking Charges, which include the four components listed below (Peaking Charges are tiered and the water available in each of the tiers differs for each customer/customer class based on the following factors):

A. Conservation cost;
B. Delivery charges;
C. Weather; and
D. Peak delivery costs.

Given the Constitutional requirement, economics, operations of the utility, water available to each customer in each Peaking Charges tier may differ based on lot size, number of occupants, and customer type, which are all based on the demands placed upon the utility. Although the unit cost for Peaking Charges are the same for all customers, they differ in the amount of water delivered within each tier based on the customer class and usage patterns. This is different from the water supply charge as regardless of the customer class the units delivered and the cost per unit are fixed. The following is an example customer bill.

Example Bill (3/4 Inch Meter, 50 CCF Used)				
Water Supply Charges	CCF per Tier	Water Use	Water Supply Rate	Total Water Supply
Tier 1	0-16	16	$0.84	$13.44
Tier 2	17-27	11	$0.91	$10.01
Tier 3	28+	23	$1.08	$24.84
Subtotal		50		$48.29
Peaking Charges	CCF per Tier	Water Use	Peaking Charges Rate	Total Peaking
Tier 1/Indoor Budget	0-18	18	$0.34	$6.12
Tier 2/Outdoor Budget	19-60	32	$0.87	$27.84
Tier 3/> Budget	61+	0	$0.89	$0.00
Subtotal		50		$33.96
Total Commodity Charges				**$82.25**
Service Charge				**$35.36**
Total Bill				**$117.61**

E. Needed Revenue Increase

There are three basic categories to the need for the rate increases in water and one for sewer, which will each be explained in detail. For water, they are reduced revenues due to conservation, pipeline replacements, and inflation. For sewer, the reason is the impact due to inflation.

Water

For decades the City has failed to keep pace with the replacement of its water infrastructure. Because of this in the past eight years staff has been working hard to repair and rehabilitate the necessary infrastructure and at the same time improve the reliability of the system. Additionally, as utility customers respond to the City's efforts to reduce their water consumption, resulting from the Governor's executive orders, revenues utilized for operations and replacement projects has declined. These impacts are explained in greater detail below.

1. Reduced revenues. Following the Governor's call for conservation, over the last five months of this fiscal year, the water utility has observed a reduction in sales of 21.4 percent and a revenue loss of ~$2 million as compared to last year due to reduced consumption by the utility's customers, and based on projections, this shortfall will continue and could amount to a net revenue of ~$3.3 million. Because approximately 85 percent of the utility's expenses are fixed this causes a significant impact to the fiscal health of the utility.

2. Pipelines. There are many examples of the decades of deferred maintenance that can be highlighted, which are being or have been addressed in the past eight years, however pipeline replacement is one that is still needing more funding to fully address. This is evident as one looks at the amount of water leaks City staff repairs and the cost associated with managing these efforts each year. In December 2014 and February 2015, the Water Infrastructure Rehabilitation Deployment (WIReD) program was presented to and well-received by the Municipal Utilities/Public Works Commission and UAC, respectively. WIReD outlines pipeline deficiencies, issues related to old pipeline, water distribution expenses, and water leaks in the City's water system and shows roughly 25 miles of pipeline with an average age of 81 years old (60 years above the average life expectancy).

   In 2012, the City embarked on the Pavement Accelerated Rehabilitation Implementation Strategy (PARIS) program. This program entails rehabilitating 2/3 of all City streets in five years. In order to facilitate this effort, coordination with all utilities is paramount as removing newly placed asphalt to make utility repairs or replacements is not acceptable and should be avoided wherever possible. As many of the City's own pipelines are in need of replacement, it is important that these pipelines be replaced prior to resurfacing any street. This program further enhances the need to keep pace with, and accelerate, the City's pipeline replacement program.

Water and Sewer

To mitigate the impacts inflation has on the spending power of both the water and sewer utilities, rate adjustments are proposed. Rate adjustments are necessary for the utility to

continue to operate given an expected spending power of the revenues being received, rates must be adjusted upwards at the same and expected rate. The inflation rates used differ based on the category of the items being purchased and are listed below.

1. Inflation (Water). The inflation factors used in the water utility are as follows: General, 3 percent; Existing Personnel, 3 percent; Benefits, 5 percent; Supplies & Materials, 3 percent; Energy/Utilities, 3 percent; Capital, 3 percent.

2. Inflation (Sewer). The inflation factors used in the water utility are as follows: General, 3 percent; Existing Personnel, 3 percent; Benefits, 5 percent; Supplies & Materials, 2 percent; Energy/Utilities, 3 percent; Capital, 3 percent.

F. Past Improvements and Use of Utility Funds

Since 2007, there have been other rate adjustments necessary to complete deferred projects and to keep pace with the rate of inflation. Many of these differed projects were needed years prior, however the necessary attention and funding was not available. These deferred and necessary projects included replacing nearly 55 miles of water and sewer pipeline, rehabilitating 9 reservoirs and 14 water production wells, completing the Hinckley surface water treatment plant regulatory upgrades and 15 booster upgrades, replacing wastewater treatment plant centrifuge and wastewater peak pond liner replacement project, and installing the backbone supervisory control and data acquisition system. These improvements demonstrate the Council's and staff's proactive management of these two vital utilities, having a combined replacement value greater than $300 million. In all, the improvements over the past eight and one half years total over $80 million.

G. Debt

Identified in the rate model are numerous projects and operational expenses. None of these expenses are to be funded through the issuance of new debt primarily because nearly all of the expenses are ongoing and need to be completed annually. Identified above was an increase in the pipeline budget, much of this increase is to be expended annually and therefore issuing debt to fund the expenses would lead to the utility becoming insolvent.

There is also the question of debt owed to the utility by other funds. At this time there is only one interest-bearing loan outstanding, from the Cemetery fund, and that amount is over $1.2 million. Annually the Cemetery fund makes payments to repay this debt.

H. Recommended Rate Adjustments

Based upon the extensive evaluation of both a traditional rate and budget based rate staff is recommending the following water rate. Further, staff is recommending sewer rate adjustments for three years, which are shown below.

1. Water Rate Adjustment. Issue a public hearing/Proposition 218 notice for the following water revenue adjustments: 19 percent in July 2016, 11 percent in January 2017, and 10 percent in January 2018. The exact water rates are as identified on Attachment "B" titled Proposed Tiered/Budget Based Water Rate.

   The above proposed water rate adjustment is a traditional tiered rate in July 2016, and a budget based rate for 2017 and 2018.

2. Alternative Water Rate Adjustment. If the Council decides to maintain the existing tiered water rate structure Council will need to note this in its motion to issue the required public hearing/Proposition 218 notice. These rates are identified in Attachment "C" Proposed Tiered Water Rates.

3. Sewer Rate Adjustment. Issue a public hearing/Proposition 218 notice for the following sewer revenue adjustments: 2.5 percent in mid-2016, 2.5 percent in January 2017, and 2.5 percent in January 2018. The exact sewer rates are as identified on Attachment "D" titled Proposed Sewer Rate.

   As the UAC made its recommendation to increase sewer rates for two years, and because the rates for water were evaluated further, which delayed rate adjustments, staff is recommending a third year adjustment be made which is exactly consistent with the rate model results presented to the UAC and for which the UAC approved sewer rate adjustment was made. This third year adjustment will allow the City to defer the rate process for one year, which is a cost saving proposal.

4. Nonpotable Water Rate Adjustment. Neither the UAC, staff, nor RFC recommend a rate adjustment at this time.

Finally, staff would like to thank the members of the UAC for their efforts to understand and evaluate the complex subject of utility budgets and rate making. Their efforts allowed staff and RFC to design a rate that will satisfy the utilities needs for at least the next three years.

FISCAL IMPACT:

As mentioned above there is an immediate need to recover the necessary revenues associated with operating and maintaining the City's utilities. The adoption of adequate rates, pending the Proposition 218 notice period and public hearing, will have a positive impact allowing the City to continue to meet this obligation and properly maintain and operate the City's water and sewer utilities.

STRATEGIC PLAN:

Numerous sections within the Strategic Plan (Priority Focus Area – C: Infrastructure) identify the need to replace and rehabilitate the City's aging water infrastructure. This rate adjustment solidifies the funding to complete these items. In July 2015, the Council also added a Strategic Plan Objective to conduct a review of the utility rate structure under Priority Focus Area – A: Fiscal Accountability.

ALTERNATIVES:

Council may elect to not approve the recommended rate adjustment or Council may approve a different rate adjustment.

ATTACHMENTS:

A. Raftelis Financial Consultants – Executive Rate Study Report
B. Proposed Tiered/Budget Based Water Rate
C. Proposed Tiered Water Rate
D. Proposed Sewer Rate

Prepared by:

CHRIS DIGGS
Municipal Utilities and Engineering Director

Recommended by:

N. ENRIQUE MARTINEZ
City Manager

Reviewed by:

TINA T. KUNDIG
Finance Director

Reviewed by:

DANIEL J. McHUGH
City Attorney

ATTACHMENT "A"

Raftelis Financial Consultants-Executive Rate Study Report

CITY OF REDLANDS

Water and Sewer Rate Study

Executive Summary Report / January 14, 2016

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January 14, 2016

Mr. Chris Diggs
Municipal Utilities and Engineering Director
City of Redlands
35 Cajon St., Ste 15 A
Redlands, CA 92373

Subject: Water Rate Study Report

Dear Mr. Diggs:

Raftelis Financial Consultants, Inc. (RFC) is pleased to present this report on the water and wastewater rate study (Study) to the City of Redlands (City). We are confident that the results based on a cost of service analysis and Utility Advisory Committee (UAC) input, when implemented, will result in fair and equitable rates to the City's customers and comply with the requirements of Proposition 218.

The Study involved a comprehensive review of the City's financial plans, user classifications and rate structures. An important feature of this Study was the participation of the UAC representing various business and residential interests.

It was a pleasure working with you and we wish to express our thanks to you, Ms. Cindy Tryon, Ms. Cecilia Griego, and other staff members of the City for the support and cooperation extended throughout the Study. We would also like to acknowledge the participation of and input provided by the City's UAC. If you have any questions, please call me at (626) 583-1894

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Sudhir Pardiwala
Executive Vice President

Kevin Kostiuk
Consultant

1.1 STUDY BACKGROUND

In 2014, the City of Redlands (the City) contracted Raftelis Financial Consultants (RFC) to conduct a Water, Non-potable Water, and Sewer Rate Study (Study), including a five year financial plan, and a water budget rate structure. This report presents the financial plans and rates over a five year period – however rates are reviewed and adopted in two year cycles by the City.

This Executive Summary outlines the proposed financial plan, water rates, and contains a description of the rate study process, methodology, results and recommendations for the City's rates. RFC completed the City's last rate study in 2010 and the City's last rate adjustment was effective on January 1, 2013. In accordance with the Redlands Municipal Code, the City is committed to reviewing its rates and rate structure every two years to ensure fairness and equity to its customers and the financial stability of the water and sewer enterprises. The City wishes to establish fair and equitable rates that:

- Proportionately allocate the costs of providing service in accordance with California Constitution article XIII D, section 6 (commonly referred to as Proposition 218).
- Meet the City's fiscal needs in terms of operational expenses, reserve targets, and capital investment to maintain the water system
- Maintain affordable charges for customers; and
- Provide revenue stability and financial sufficiency in times of water supply shortage or mandatory conservation

1.2 OBJECTIVES OF THE STUDY

The major objectives of the Study include the following:

1. Develop financial plans for the water and sewer enterprises to ensure financial sufficiency, meet operation and maintenance (O&M) costs, ensure sufficient funding of City financial reserves, and fund capital repair and replacement (R&R). In addition, the analyses contained in this Report make assumptions regarding future water usage and ensures that the City is financially prepared for a period of reduced sales;
2. Conduct a cost-of-service analysis for the water system;
3. Develop fair and equitable water, non-potable water, and sewer rates compliant with the requirements of Proposition 218, that adequately recover costs, provide revenue stability for recovering fixed costs, and maintain affordable water service

1.3 PROCESS

The City's rate setting process involves active participation from the Utilities Advisory Committee (UAC) appointed by the City Council to provide input and guidance on the Study. The UAC met with staff and RFC in a series of public meetings, noticed according to the Brown Act requirements, to understand utility issues and to provide input and guidance in order to finalize the rate recommendations. RFC made several presentations discussing study assumptions, financial data, water budget variables and approach, and the concepts of rate making, to promote discussion and build consensus among UAC committee members, City staff, and RFC. RFC designed rate models to analyze various scenarios, resulting rates and customer impacts. The revenue adjustments and rates presented in this report are a result of this process.

This report was prepared using the principles established by the American Water Works Association (AWWA). The AWWA *"Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1* (the "M1 Manual") establishes commonly accepted professional standards for cost of service studies. The M1 Manual general principles of rate structure design and the objectives of the Study are described below.

According to the M1 Manual, the first step in the ratemaking analysis is to determine the adequate and appropriate level of funding for a given utility. This is referred to as determining the "revenue requirements". This analysis considers the short-term and long-term service objectives of the utility over a given planning horizon, including capital facilities, system operations and maintenance, and financial reserve policies to determine the adequacy of a utility's existing rates to recover its costs. A number of factors may affect these projections, including the number of customers served, water-use trends, nonrecurring sales, weather, conservation, use restrictions, inflation, interest rates, wholesale contracts, capital finance needs, changes in tax laws, and other changes in operating and economic conditions.

After determining a utility's revenue requirements, the next step is determining the cost of service. Utilizing a public agency's approved budget, financial reports, operating data, and capital improvement plans, a rate study generally categorizes (functionalizes) the system costs (e.g., treatment, storage, pumping, etc.), including operating and maintenance and asset costs, among major operating functions to determine the cost of service.

After the assets and the costs of operating those assets are properly categorized by function, these "functionalized costs" are allocated first to cost causation components, and then to the various customer classes (e.g., single-family residential, multi-family residential, non-building, and commercial) by determining the characteristics of those classes and the contribution of each to incurred costs such as base costs, peaking costs, delivery costs, service characteristics, and demand patterns.

Rate design is the final element of the rate-making procedure and uses the revenue requirement and cost of service analysis to determine rates for each customer class that reflect the cost of providing service to those customers. Rates utilize "rate components" that build-up to commodity rates, and fixed charge rates, for the various customer classes and meter sizes servicing customers. In the case of tiered rates, the rate components themselves allocate the cost of service *within* each class of customer, effectively treating each tier as a sub-class and determining the cost to serve each tier.

1.4 LEGAL REQUIREMENTS AND RATE SETTING METHODOLOGY

1.4.1 California Constitution - Article XIII D, Section 6 (Proposition 218)

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements for fairness of the fees, as they relate to public water service are as follows:

1. A property-related charge (such as water and wastewater rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property related service.
2. Revenues derived by the charge shall not be used for any purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. A written notice of the proposed charge shall be mailed to the record owner of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

As stated in AWWA's *M1 Manual*, "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." Prop 218 requires that water rates cannot be "arbitrary and capricious," meaning that the rate-setting methodology must be sound and that there must be a nexus between the costs and the rates charged. RFC follows industry standard rate setting methodologies set forth by the AWWA *M1 Manual* to ensure this study meets Proposition 218 requirements and develops rates that do not exceed the proportionate cost of providing water services.

1.4.2 California Constitution - Article X, Section 2

Article X, Section 2 of the California Constitution (established in 1976) states the following:
"It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

Article X, section 2 of the State Constitution institutes the need to preserve the State's water supplies and to discourage the wasteful or unreasonable use of water by encouraging conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

Tiered Rates – Budget based water rates are a specific form of traditional inclining block rates. "Inclining" block rate structures (which are synonymous with "increasing" block rate structures and "tiered" rates) when properly designed and differentiated by customer class, often send price signals to customers. Due to conservation mandates and efficiency of water use, budget based water rates have gained increasing acceptance, especially in relatively water-scarce regions, like Southern California. Tiered rates meet the requirements of Proposition 218 as long as the tiered rates reasonably reflect the proportionate cost of providing service to users in each *tier*.

1.4.3 Cost-Based Rate-Setting Methodology

As stated in the AWWA M1 Manual, "the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." To develop utility rates that comply with Proposition 218 and industry standards, there are four major steps discussed below.

1) Calculate Revenue Requirement

The rate-making process starts by determining the test year (rate setting year) revenue requirement, which for this study is fiscal year ending (FYE) 2016. The revenue requirement should sufficiently fund the utility's O&M, debt service, capital expenses, and reserves.

2) Cost Of Service Analysis (COS)

The annual cost of providing water service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalize costs. Examples of functions are supply, treatment, transmission, distribution, storage, meter servicing, and customer billing and collection.
2. Allocate functionalized costs to cost causation components. Cost causation components include base, maximum day, maximum hour[1], conservation, public fire protection, meter service, and customer servicing and billing costs.
3. Distribute the cost causation components. Distribute cost components, using unit costs, to customer classes in proportion to their demands on the water system. This is described in the M1 Manual published by AWWA.

A COS analysis considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands).[2] Peaking costs are costs that are incurred during peak times of consumption. There are additional costs associated with designing, constructing, and operating and maintaining facilities to meet peak demands. These peak demand costs need to be allocated to those imposing such costs on the utility. In other words, not all customer classes share the same responsibility for peaking related costs.

3) Rate Design and Calculations

Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as ensuring rates are fair and equitable to all customers and ensuring revenue stability, among other objectives. Rates may also act as a public information tool in communicating these objectives to customers.

4) Rate Adoption

Rate adoption is the last step of the rate-making process to comply with Proposition 218. RFC documents the rate study results in this Study Report to act as an administrative record for the City and a public education tool about the proposed changes, the rationale and justifications behind the changes, and their anticipated financial impacts in lay terms.

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[1] *Collectively maximum day and maximum hour costs are known as peaking costs or capacity costs.*

[2] System capacity is the system's ability to supply water to all delivery points at the time when demanded. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital asset related costs incurred to accommodate the peak flows are generally allocated to each customer class based upon the class's relative demands during the peak month, day, and hour event.

1.5 RESULTS AND RECOMMENDATIONS - WATER

1.5.1 Proposed Financial Plan – Water and Non-Potable Water

Table 1-1 shows the proposed revenue adjustments for the water enterprise for the next five fiscal years. The revenue adjustments for water include needed revenue to fund approximately $22 million of backlogged water main replacement over 10 years. A total of nearly $76 million is planned for the water main replacement program over the next ten years. The program will be funded exclusively through rate revenue.

Table 1-1: Revenue Adjustments by Utility

Enterprise	Revenue Adjustments					5-Year CIP
	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	
Water	19%	11%	10%	2%	2%	$41.3 M

1.5.2 Factors Affecting Revenue Adjustments

The following items affect the water enterprise's revenue requirement (i.e. costs) and thus its water rates. The City's costs include Operation and Maintenance (O&M) expenses and capital expenses (including debt service).

- **Capital Funding of System Improvements:** The City's water distribution infrastructure is aging – the average age for steel water mains is 63 years old. The proposed water rates include funding to replace a 25 mile water main backlog as well as replace pipes as they become due for replacement. Backlog pipe replacement accounts for $6.5 M over the next five years and $22M over the next 10 years.

- **Reserve Funding:** It is good practice to establish reserves so that the water utility can provide funding for emergencies and unexpected expenditures. The City's water reserve sets aside funds for revenue shortfalls. The agreed upon target for the reserve is 37% of annual operations and maintenance expenditures (O&M), or approximately $6.3 million in FY 2016.

- **Mandatory Conservation:** On April 1, 2015, Governor Brown issued Executive Order B-29-15 directing the State Water Resources Control Council (SWRCB) to work with water service providers to reduce urban potable use by 25% statewide. The City is required to reduce usage by 36%; the City anticipates reduced water demand of at least 25%, as this is what has been achieved from June-September of 2015. While the reduction of 25% may be temporary, the City anticipates a permanent reduction in water sales of 10% from behavioral changes in water use and more efficient indoor and outdoor fixtures. The reduced sales result in lower revenues and significantly impact long term water sales revenues.

- **Previously Proposed Revenue Adjustments:** In the winter of 2015 RFC proposed increases of 7 percent in FYE 2015 and 7 percent in FYE 2016. These adjustments were not made and included, among other things, rate adjustments due to inflation.

The City's water utility operates in an environment where operational costs continue to increase and reinvestment in infrastructure is required as outlined within the City's updated Master Plan. This is not

unique to the City, as many agencies throughout the state are faced with the need to update capital infrastructure necessary to continue providing reliable utility services and adhere to new regulations and mandates.

1.5.3 Proposed Rate Structure – Modified Water Budget

The City wishes to study and potentially implement a water budget rate structure that creates fair and equitable rates, provides revenue stability to the utility, and acts as a water resource management tool for long term and strategic planning purposes. The rate structure must strictly meet the criteria of Proposition 218. The description of the allocations to individual parcel accounts and the development of water budgets is described in detail in the final report and summarized in this Executive Summary. The water budget rate structure is ideally suited for residential and irrigation accounts. Non-residential accounts are heterogeneous and not ideally suited for water budget rate structures and are converted to uniform rates.

A water budget attempts to determine an efficient level of water usage based on parcel specific, and household specific (in the case of residential accounts), characteristics. Therefore the "allocation" of water for customers vary based on criteria including household size, landscape area, and weather, as these criteria are economically driven. Residential accounts have an indoor allocation, or budget, to meet household needs (e.g. cooking, cleaning, and sanitation) and an outdoor allocation to meet the irrigation demands of their individual parcel; further this use has little impact to peak demands placed on the water system. The outdoor budget considers a parcel's landscape, or irrigated area, and evapotranspiration from the landscape for each billing period, among other factors. This use has a greater impact on the water system and therefore the cost of providing this service is adjusted accordingly. The sum of the **indoor** and **outdoor** budgets equals an account's **total water budget**. A water budget rate structure is in essence a special case of a traditional inclining block rate structure where the tier sizes are account specific. That is the tier widths, or the amount of water in each tier, is different among customers in the same class, and varies with the weather for a single account throughout the year.

The proposed rate structure divides the existing commodity rate into two components. The first component is the **water supply charge** which recovers costs for purchasing and producing water, delivery costs under average conditions, and some costs associated with City water conservation programs. The second component is the **peaking charge** and recovers capacity related costs. Customer's peak use characteristics affect the volume and timing of their water use, which influences the sizing and operation of the entire water system. Note, the amount of commodity revenue, as a percentage of total revenue, remains the same; the commodity revenue, however, is collected over two distinct charges.

Tiers are defined by water supply availability and by water budget allocation. Tiers based on water supply availability are defined as follows: The City has five sources of water that are organized into three cost groups based upon the cost of each source. Each cost group provides a specific number of units of water to each account. The lowest cost water provides on average 16 HCF per bi-monthly billing period. The second lowest cost water provides on average an additional 11 HCF per period. The three most expensive sources of supply constitute the water to supply demand in Tier 3 (Tier 2 for Non-Building accounts), or

all use greater than 27 HCF bi-monthly. RFC proposes that commercial accounts be restructured to a uniform rate to acknowledge the diversity of use within the class.

Tiers based on water budget allocation are defined by the indoor and outdoor allocations. Tier 1, indoor allocations, are set by default as the efficient water use of a four person household for single family and three person household for multi-family[3]. Tier 2, outdoor allocations, are based on landscape area and historical weather patterns for efficient water usage based on the California *Model Water Efficient Landscape Ordinance (MWELO)*. While the Tier 1 indoor allocation will be the same for most residential customers unless they request changes to their household density (number of persons in household), the outdoor allocation will vary with the landscape area of each property.

Table 1-2 shows the current and proposed water usage rates.

Table 1-2: Current and Proposed Water Usage Rates

	Prior Tier Breakpoints (HCF)[4]	New Tier Breakpoints (HCF)	Current Rate (Inside City/ Outside City)	Proposed FY 2016 (Water Supply)	Proposed FY 2016 (Peaking)
Single Family					
Tier 1	10	16	$0.87/$0.88	$0.84	$0.34
Tier 2	11-60	17-27	$1.49/$1.52	$0.91	$0.87
Tier 3	>60	>27	$1.64/$1.67	$1.08	$0.89
Multi Family					
Tier 1	10	16	$0.87/$0.88	$0.93	$0.36
Tier 2	11-60	17-27	$1.49/$1.52	$1.08	$0.38
Tier 3	>60	>27	$1.64/$1.67	$1.12	$1.35
Non-Building (Irrigation)					
Tier 1	60	27	$1.49/$1.52	$0.92	$0.20
Tier 2	>60	>27	$1.64/$1.67	$1.11	$0.90
Commercial					
Tier 1	10	Uniform	$0.87/$0.88	$1.08	$0.80
Tier 2	11-60		$1.49/$1.52		
Tier 3	>60		$1.64/$1.67		

Table 1-3 shows the shows the current and proposed bi-monthly service charges by meter size. The charges are based upon modified AWWA hydraulic capacity ratios from the "*Sizing Water Service Lines and Meters M22*" ("Manual M22"). Calculation of proposed service charges is consistent with previous studies conducted by RFC.

Table 1-3: Current and Proposed Water Bi-Monthly Service Charges

Meter Size	Current Charge (Inside City)	Current Charge (Outside City)	Proposed Charge FY 2016
5/8-in	$28.08	$31.23	$26.29

[3] The rate structure allows for variances for households that have more than, or less than, the default value.

[4] *HCF = Hundred Cubic Feet*

3/4-in	$37.48	$40.61	$35.36
1-in	$55.67	$60.67	$52.97
1 1/2-in	$99.77	$109.22	$95.66
2-in	$147.20	$161.47	$141.55
3-in	$254.17	$279.34	$245.07
4-in	$392.02	$431.35	$378.47
6-in	$722.87	$796.23	$698.63
8-in	$1,064.73	$1,173.84	$1,029.46

Based on a prior rate analysis, RFC determined that the historical justification for the different inside-city and outside-city rates is no longer valid. This determination is based upon inside-city (owners of the utility) customers receiving the proper return on their invested capital. Therefore the proposed commodity and service charge rates apply to both inside and outside City customers.

1.6 RESULTS AND RECOMMENDATIONS - WASTEWATER

1.6.1 Proposed Financial Plan – Wastewater

A cost of service approach was used to update the wastewater service rate. The primary revenue requirements include capital projects, increased costs of operation due to inflationary effects and increased electricity costs, and debt service payments. The following elements have impacted the City's wastewater rates:

- **Power Costs.** The cogeneration facilities at the wastewater treatment plant no longer meet regulatory guidelines. Accordingly, the City's cost to purchase power has increased significantly.
- **Inflationary Cost Pressures for Labor and Materials.** The following escalation factors were used in the model:
    - General- 3 percent
    - Salaries- 3 percent
    - Personnel- 3 percent
    - Benefits- 5 percent
    - Supplies & Materials- 2 percent
    - Energy/Utilities- 3 percent
    - Capital- 3 percent
- **System Improvements.** Deferred costs for replacement and system improvement projects are required for reliable service.

The recommended revenue enhancements for the wastewater utility are 2.5 percent per year in 2016, 2017, and 2018. The revenue adjustments are required to meet all financial obligations of the wastewater utility. Because of the replacement and refurbishment nature of the capital improvements, the UAC opted to fund capital improvements on a pay-as-you-go basis from rates instead of debt funding.

Figure 1-10 shows how the wastewater revenues under the current and proposed rates meet revenue requirements over the planning period. The flat red horizontal line depicts revenue under existing rates. As shown, revenues under existing rates are inadequate to meet the revenue requirements over the planning period. Revenues from proposed rates are depicted by the green line. Revenues from proposed rates are adequate to meet revenue requirements during most of the forecast period. However, funds in

the reserves account above the minimum necessary reserve will be used in fiscal years 2012 to 2016 to fund the shortfall in revenues.

The recommended balance in this fund is to maintain 37 percent of the City's annual wastewater operating and maintenance (O&M) expenses, the wastewater reserves remain slightly above this level through 2024.

1.6.2 Wastewater Rate Structure

The current wastewater rate structure consists of a flat bi-monthly charge for residential customers and a rate based on water usage for non-residential customers, depending on the wastewater strength. During the 2004 rate study, RFC recommended changes to the City's wastewater rate structure based on input from the UAC. The changes included expanding the classification of non-residential customers from three categories to eight. This classification included three classifications of low strength users, three classifications of medium strength users, and two classifications of high strength users, as shown in Table 1-4 below. For this planning period, the UAC retained the existing wastewater rate structure.

Table 1-4: Wastewater Strengths for Non-Residential Customers

Category	BOD + SS (mg/L)
Low Strength	0-200
	201-400
	401-600
Medium Strength	601-800
	801-1,000
	1,001-1,200
High Strength	1,201-1,400
	>1,400

Table 1-5 summarizes the proposed rates under the recommended wastewater rate structure.

Table 1-5: Proposed Wastewater Rate Schedule

Customer Class	Current Rates	July 2016	January 2017	January 2018
Residential				
Single Family Residential	$46.48	$47.64	$48.83	$50.05
Multi-Family Residential	$34.91	$35.78	$36.68	$37.59
Non-Residential				
Minimum Charge	$34.91	$35.78	$36.68	$37.59
Low Strength I	$1.90	$1.95	$2.00	$2.05
Low Strength II	$2.01	$2.06	$2.11	$2.16
Low Strength III	$2.45	$2.51	$2.57	$2.64
Medium Strength I	$2.94	$3.01	$3.09	$3.17
Medium Strength II	$3.38	$3.46	$3.55	$3.64
Medium Strength III	$3.82	$3.92	$4.01	$4.11
High Strength I	$4.27	$4.38	$4.49	$4.60
High Strength II	$4.64	$4.76	$4.87	$5.00
Large Volume User	$2.56	$2.62	$2.69	$2.76
Customer Class	Current Rates	July 2016 $ /100 ADA	January 2017 $ / 100 ADA	January 2018 $ / 100 ADA
Schools				
Elementary*	$110.84	$113.61	$116.45	$119.36
Secondary/High Schools*	$184.74	$189.36	$194.09	$198.94
Septage				
Minimum Charge	$11.70	$11.99	$12.29	$12.60
Septage ($/gal)	$0.10	$0.10	$0.11	$0.11

ATTACHMENT "B"

Proposed Tiered/Budget Based Water Rate

Attachment "B" Proposed Tiered/Budget Based Water Rate

Tiered Rate Schedule

Bi-Monthly Service Charge

Meter Size	Current Rates		Proposed Jul-16
	Inside City	Outside City	Inside & Outside City
5/8"	$ 28.08	$ 31.23	$ 26.28
3/4"	$ 37.48	$ 40.61	$ 35.35
1"	$ 55.67	$ 60.67	$ 52.96
1-1/2"	$ 99.77	$ 109.22	$ 95.65
2"	$ 147.20	$ 161.47	$ 141.54
3"	$ 254.17	$ 279.34	$ 245.06
4"	$ 392.02	$ 431.35	$ 378.46
6"	$ 722.87	$ 796.23	$ 698.62
8"	$ 1,064.73	$ 1,173.84	$ 1,029.45
10"	NA	NA	$ 2,438.16
12"	NA	NA	$ 3,206.55

Building Usage Rate ($ / hcf)

	Old Tier	New Tier	Current Rates		Proposed Jul-16
			Inside City	Outside City	Inside & Outside City
Tier 1	1 to 10	1 to 16	$ 0.87	$ 0.88	$ 1.18
Tier 2	11 to 60	17 to 27	$ 1.49	$ 1.52	$ 1.45
Tier 3	61 & up	28 & up	$ 1.64	$ 1.67	$ 2.20

Non-Building Usage Rate ($ / hcf)

	Old Tier	New Tier	Current Rates		Proposed Jul-16
			Inside City	Outside City	Inside & Outside City
Tier 1	1 to 60	1 to 27	$ 1.49	$ 1.52	$ 1.45
Tier 2	60 & up	27 & up	$ 1.64	$ 1.67	$ 2.20

Bi-Monthly Fire Service Charge

Meter Size	Current Rates	Proposed Jul-16
		Inside & Outside City
2"	$ 54.96	$ 8.34
3"	$ 54.96	$ 14.82
4"	$ 54.96	$ 26.00
6"	$ 72.15	$ 66.12
8"	$ 97.73	$ 135.31
10"	$ 149.53	$ 239.40
12"	$ 198.77	$ 383.66
Fire Usage Rate (hcf)	$ 1.64	$ 2.20

Budget Based Rate Schedule

Propsoed Budget Based Rate Schedule			
	Current Charge	Jan-17	Jan-18
Bi-Monthly Service Charge			
5/8"	$ 28.08	$ 29.18	$ 32.10
3/4"	$ 37.48	$ 39.25	$ 43.17
1"	$ 55.67	$ 58.80	$ 64.68
1-1/2"	$ 99.77	$ 106.18	$ 116.80
2"	$ 147.20	$ 157.12	$ 172.83
3"	$ 254.17	$ 272.03	$ 299.23
4"	$ 392.02	$ 420.10	$ 462.11
6"	$ 722.87	$ 775.48	$ 853.03
8"	$ 1,064.73	$ 1,142.70	$ 1,256.97
10"	$ -	$ 2,706.37	$ 2,977.01
12"	$ -	$ 3,559.28	$ 3,915.21
Bi-Monthly Fire Service Charge			
2"	$ 54.96	$ 9.25	$ 10.18
3"	$ 54.96	$ 16.45	$ 18.09
4"	$ 54.96	$ 28.86	$ 31.74
6"	$ 72.15	$ 73.39	$ 80.73
8"	$ 97.73	$ 150.20	$ 165.22
10"	$ 149.53	$ 265.73	$ 292.31
12"	$ 198.77	$ 425.86	$ 468.45
Tier 1	$ 0.87	$ 1.03	$ 1.14
Tier 2	$ 1.49	$ 1.20	$ 1.32
Tier 3	$ 1.64	$ 1.24	$ 1.37
Water Supply Charges			
Non-Residential			
Uniform	N/A	$ 1.20	$ 1.32
Non-Building			
Tier 1	N/A	$ 1.02	$ 1.12
Tier 2	N/A	$ 1.23	$ 1.36
Fire	N/A	$ 1.27	$ 1.39

Peaking Charges (Parcel Allocation Based)

SFR	Current Charge	Jan-17	Jan-18
Tier 1	N/A	$ 0.38	$ 0.42
Tier 2	N/A	$ 0.97	$ 1.06
Tier 3	N/A	$ 0.99	$ 1.09
MFR			
Tier 1	N/A	$ 0.40	$ 0.44
Tier 2	N/A	$ 0.42	$ 0.46
Tier 3	N/A	$ 1.50	$ 1.65
Non-Residential			
Uniform	N/A	$ 0.89	$ 0.98
Non-Building			
Tier 1	N/A	$ 0.22	$ 0.24
Tier 2	N/A	$ 1.00	$ 1.10
Fire	N/A	$ 0.89	$ 0.98

ATTACHMENT "C"

Proposed Tiered Water Rate

Attachment "C" Proposed Tiered Water Rate

Bi-Monthly Service Charge

Meter Size	Current Rates		Proposed Jul-16	Proposed Jan-17	Proposed Jan-18
	Inside City	Outside City	Inside & Outside City	Inside & Outside City	Inside & Outside City
5/8"	$ 28.08	$ 31.23	$ 26.28	$ 29.17	$ 32.09
3/4"	$ 37.48	$ 40.61	$ 35.35	$ 39.24	$ 43.16
1"	$ 55.67	$ 60.67	$ 52.96	$ 58.78	$ 64.66
1-1/2"	$ 99.77	$ 109.22	$ 95.65	$ 106.17	$ 116.79
2"	$ 147.20	$ 161.47	$ 141.54	$ 157.11	$ 172.82
3"	$ 254.17	$ 279.34	$ 245.06	$ 272.01	$ 299.21
4"	$ 392.02	$ 431.35	$ 378.46	$ 420.09	$ 462.10
6"	$ 722.87	$ 796.23	$ 698.62	$ 775.47	$ 853.01
8"	$ 1,064.73	$ 1,173.84	$ 1,029.45	$ 1,142.69	$ 1,256.96
10"	NA	NA	$ 2,438.16	$ 2,706.36	$ 2,977.00
12"	NA	NA	$ 3,206.55	$ 3,559.27	$ 3,915.20

Building Usage Rate ($ / hcf)

	Old Tier	New Tier	Current Rates		Proposed Jul-16	Proposed Jan-17	Proposed Jan-18
			Inside City	Outside City	Inside & Outside City	Inside & Outside City	Inside & Outside City
Tier 1	1 to 10	1 to 16	$ 0.87	$ 0.88	$ 1.18	$ 1.31	$ 1.46
Tier 2	11 to 60	17 to 27	$ 1.49	$ 1.52	$ 1.45	$ 1.61	$ 1.78
Tier 3	61 & up	28 & up	$ 1.64	$ 1.67	$ 2.20	$ 2.44	$ 2.69

Non-Building Usage Rate ($ / hcf)

	Old Tier	New Tier	Current Rates		Proposed Jul-16	Proposed Jan-17	Proposed Jan-18
			Inside City	Outside City	Inside & Outside City	Inside & Outside City	Inside & Outside City
Tier 1	1 to 60	1 to 27	$ 1.49	$ 1.52	$ 1.45	$ 1.61	$ 1.78
Tier 2	60 & up	27 & up	$ 1.64	$ 1.67	$ 2.20	$ 2.44	$ 2.69

Bi-Monthly Fire Service Charge

Meter Size	Current Rates	Proposed Jul-16	Proposed Jan-17	Proposed Jan-18
		Inside & Outside City	Inside & Outside City	Inside & Outside City
2"	$ 54.96	$ 8.34	$ 9.25	$ 10.18
3"	$ 54.96	$ 14.82	$ 16.45	$ 18.09
4"	$ 54.96	$ 26.00	$ 28.86	$ 31.74
6"	$ 72.15	$ 66.12	$ 73.39	$ 80.73
8"	$ 97.73	$ 135.31	$ 150.20	$ 165.22
10"	$ 149.53	$ 239.40	$ 265.73	$ 292.31
12"	$ 198.77	$ 383.66	$ 425.86	$ 468.45

Fire Usage Rate (hcf)	$ 1.64	$ 2.20	$ 2.44	$ 2.69